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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,615	07/01/2003	Hiroyasu Inoue	890050.434	3987
500 7590 03/13/2007 SEED INTELLECTUAL PROPERTY LAW GROUP PLLC 701 FIFTH AVE SUITE 5400 SEATTLE, WA 98104			EXAMINER CHEN, TIANJIE	
			ART UNIT	PAPER NUMBER
			2627	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/13/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/612,615

**Applicant(s)**

INOUE ET AL.

**Examiner**

Tianjie Chen

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,5,7 and 9-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-20 is/are allowed.
- 6) ☒ Claim(s) 1,5,7,9-12 and 21-24 is/are rejected.
- 7) ☒ Claim(s) 13,14 and 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Final Rejection (RCE)***

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 5, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aratani et al (US 6,788,635) in view of Takaoka et al (JP 60-160036A with English equivalent US 4,682,321).

Claim 1, Aratani et al shows an optical recording medium in Fig. 6 including a substrate 31, a light transmission layer 1 and a plurality of recording layers 2 and 32 between the substrate and the light transmission layer and capable of recording data in the plurality of recording layers and reproducing data recorded in the plurality of recording layers by projecting a laser beam via the light transmission layer onto the plurality of recording layers (Fig. 6; column 10, line 50 to column 11, line 4), wherein data recorded in and reproduced from recording layer 32, which is farthest from the light transmission layer 1, by projecting the laser beam thereonto via the light transmission layer and at least one recording layer 2 other than the farthest recording layer 32 and the at least one recording layer other than a farthest recording layer from the light transmission layer includes a reflective film 3 containing Ag as a primary component and additive is added, wherein C is used as an additive in Ag (Column 10, lines 18-28).

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Aratani et al fails to show each of the plurality of recording layers includes a first recording film containing one kind of element selected from a group consisting of Si, Ge, Sn, Mg, C, Al, Zn, In, Cu, and Bi as a primary component and a second recording film disposed in the vicinity of the first recording film and containing one kind of element from a group consisting of Cu, C, Al, Zn, Si, and Ag and different from the element contained in the first recording film as a primary component- and the element contained in the first recording film as a primary component and the element contained in the second recording film as a primary component are mixed when the first recording film and the second recording film are irradiated with the laser beam. thereby forming a record mark .

Takaoka et al shows an optical recording medium, wherein the recording layer 15 includes a first recording film 13 and 14 (Column 3, lines 25-26 in US 4,682,321), wherein one contains Ge, as a primary component and other one disposed in the vicinity of the first recording film and contains Al (Column 2, lines 49-57 in US 4,682,321), which is different from the element contained in the first recording film as a primary component, and the element contained in the first recording film as a primary component and the element contained in the second recording film as a primary component are mixed when the first recording film and the second recording film are irradiated with the laser beam. thereby forming a record mark (Column 2, lines 2-8 in US 4,682,321); and teaches that use of this recording structure can overcome the problem of low sensitivity, the instability of the boundary between the recorded and unrecorded portions, and low lifetime (p, 244, right column line 18 to left bottom column, line 2). One of ordinary skill in the art would have been motivated to

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replace the recording layer in Aratani et al's device by the recording layer taught by Takaoka et al for overcoming the problems as described.

Claim 5, Aratani et al teaches the reflective film included in the at least one recording layer contains 0.5 atomic % to 5.0 atomic % of C.

Claim 7, Aratani et al teaches that the reflective film included in the at least one recording layer contains 1.0 atomic % to 4.0 atomic % of C.

Claim 9, Aratani et al teaches that the reflective film included in the at least one recording layer contains about 2.5 atomic % of C.

2. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aratani et al in view of Takoaka et al as applied to claim 1 above, and further in view of Kinoshita et al (JP-285509).

Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aratani et al in view of Takoaka et al and Kinoshita et al (JP-285509).

Claims 12 and 21; Takoaka et al show that the first recording film can be made of Ge and second recording film can be made of Al; but does not specify the thickness of Ge and Al film.

Kinoshita et al shows a recording medium and discloses in table 1 that as the Ge film has a thickness of 30 nm and the Al film has a thickness of 10 nm, the structure renders a suitable modulation and reflectance. One of ordinary skill in the art would have been motivated by Kinoshita et al's teaching to set the thickness as 10 and 30 nm, which falls in the range of 2 nm to 40 nm.

Claim 22, Aratani et al teaches the reflective film included in the at least one recording layer contains 0.5 atomic % to 5.0 atomic % of C.

Claim 23, Aratani et al teaches that the reflective film included in the at least one recording layer contains 1.0 atomic % to 4.0 atomic % of C.

3. Claims 10, 11, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aratani et al and Takaoka as applied to claims 1 and 9 above, and further in view of Flynn (US 2003/0165111).

Claim 234 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aratani et al and Takaoka and Kinoshita et al as applied to claim 21 above, and further in view of Flynn (US 2003/0165111).

Claims 10, 11, and 24; Aratani et al and Takaoka et al show an optical recording medium as described above, but fail to show the light transmission layer (or substrate) has a thickness of 30  $\mu\text{m}$  to 200  $\mu\text{m}$ .

Flynn shows an optical recording medium, wherein the (light transmission layer) may have a thickness of 0.1 mm (100  $\mu\text{m}$ ) to 1.5 mm.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to set the thickness of light transmission layer thickness as taught by Flynn in the range 0.1 to 1.5 mm thus expanding the thickness range to be chosen.

#### ***Allowable Subject Matter***

4. Claims 15-20 are allowed.

Claims 14 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

- With regard to independent claim 15, as the closest reference of record, combination of Aratani et al (US 6,788,635) and Takaoka et al (US 4,682,321) discloses an optical recording medium in including a substrate, a light transmission layer and a plurality of recording layers and between the substrate and the light transmission layer and capable of recording data in the plurality of recording layers and reproducing data recorded in the plurality of recording layers by projecting a laser beam via the light transmission layer onto the plurality of recording layers, wherein data recorded in and reproduced from recording layer, which is farthest from the light transmission layer, by projecting the laser beam thereonto via the light transmission layer and at least one recording layer other than the farthest recording layer and the at least one recording layer other than a farthest recording layer from the light transmission layer includes a reflective film containing Ag as a primary component and additive is added, wherein C is used as an additive in Ag; and the plurality of recording layers includes a first recording film containing one kind of element selected from a group consisting of Si, Ge, Sn, Mg, C, Al, Zn, In, Cu, and Bi as a primary component and a second recording film disposed in the vicinity of the first recording film and containing one kind of element from a group consisting of Cu, C, Al, Zn, Si, and Ag and different from the element contained in the first recording film as a primary component- and the element contained in the first recording film as a primary component and the element contained in the second recording film as a primary component are mixed when the first recording film and the second recording film are irradiated with the

laser beam. thereby forming a record mark; **but fails to show** that and the plurality of recording layers includes a first recording film containing one kind of element selected from a group consisting of Si, Sn, Mg, C, Al, Zn, In, and Cu as a primary component and a second recording film disposed in the vicinity of the first recording film.

- With regard to claims 13, 14 and 25, as the closest reference of record, combination of Aratani et al (US 6,788,635), Takaoka et al (US 4,682,321), and Kinoshita et al (JP 2000-285509) discloses an optical recording medium in including a substrate, a light transmission layer and a plurality of recording layers and between the substrate and the light transmission layer and capable of recording data in the plurality of recording layers and reproducing data recorded in the plurality of recording layers by projecting a laser beam via the light transmission layer onto the plurality of recording layers, wherein data recorded in and reproduced from recording layer, which is farthest from the light transmission layer, by projecting the laser beam thereonto via the light transmission layer and at least one recording layer other than the farthest recording layer and the at least one recording layer other than a farthest recording layer from the light transmission layer includes a reflective film containing Ag as a primary component and additive is added, wherein C is used as an additive in Ag; **but fails to show** that the reflective film included in the at least one recording layer **by atomic** % is the secondary component /or **consists of** Ag and C.
- Applicant asserts "an object of the present invention to provide an optical recording medium having a plurality of recording layers and in which



recording characteristics and reproducing characteristic of the respective recording layers can be improved" (Specification, p. 4).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Arguments***

5. Applicant's arguments filed 12/26/2006 have been fully considered but they are not persuasive.

- Applicant argues that 'Aratani teaches away from Applicants' claimed "plurality of recording layers ... [and] a reflective film containing Ag as a primary component and C as a secondary component."
- Examiner disagrees Applicant's argument for the following reason: Aratani discloses that for the  $\text{Ag}_{100-x}\text{X}_x\text{Z}_z$  reflective film X being at least one element selected from Ge, Ni, Si, Tb, Fe, Al, Ti, Pd, Cr and Au and Z being at least one element besides the X selected from those elements. This statement is an open statement for selection of element Z, i.e. Z is at least one element from the group but does not exclude including other element. Aratani discloses in column 10, lines 18-28 that the reflectance film can include element C and also discloses in column 11, lines 41-44 that the above disclosure is for both cases disclosed in Fig. 1 and Fig. 6. Furthermore, wherein X and Z both are considered as secondary component related to the

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primary component Ag. Therefore the recitation in above rejection is proper and rejection maintains.

- Applicant request for withdrawing of 35 U.S.C. §103(a) rejection for no English translation of Takaoka '036 being provided is denied. Evidence shows that Applicant has capability of reading the prior art as shows by providing partial English translation and Applicant already possesses the English equivalent US 4,682,321 for Takaoka et al '036. These evidence clearly shows that Applicant has already has full understanding of the content of the prior art.

### ***Conclusion***

1. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 11/16/2006 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is 571-272-7570. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**TIANJIE CHEN**  
**PRIMARY EXAMINER**